



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,188	12/05/2000	Kazushi Takanashi	33152	7999
116 7590 08/19/2005 PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			EXAMINER ZHENG, EVA Y	
			ART UNIT 2634	PAPER NUMBER

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/730,188

Applicant(s)

TAKANASHI ET AL.

Examiner

Eva Yi Zheng

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-22 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/5/09, 7/24/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Amendment, filed June 9, 2005, with respect to the rejection(s) of claim(s) 1-22 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

Drawings

2. Figure 15 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1-22 are objected to because of the following informalities:

Regarding phrase: "restart a starting step of equalizing steps" is recommended to change to – restart a starting step of the equalizing filter unit --, in order to avoid claim language confusion and awkwardness.

Appropriate correction is required.

4. Claim 8 is objected to because of the following informalities: on line 4, phrase: "wave form" should be changed to – waveform --.

Appropriate correction is required.

5. Claims 10,13,16,19 and 22 are objected to because of the following informalities: phrase: "said operation" should be changed to – the operation--, in order to avoid lack of antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5 and 8-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Bhatt et al. (US 5,517,213).

- a) Regarding claim 1, AAPA disclose a waveform equalizer comprising:
an equalizing filter unit including a delay circuit with a tap (block 9 and 10 in Fig. 15);
a discriminator which decodes an output signal of said equalizing filter unit (block 5 in Fig. 15); and

tap arrangement control means which controls a tap arrangement of said equalizing filter unit (block 8 in Fig. 15; Page 1, L16 - Page 2, L8).

AAPA discloses all of the subject matter as described above except for specifically teaching of a tap coefficient monitoring unit which monitors a tap coefficient of the equalizing filter unit, and changes the tap arrangement of the equalizing filter unit so as to restart a starting step of equalizing steps for equalizing a reception signal.

Bhatt et al., in the same field of endeavor, teaches an equalizer processor (20 in Fig.1) being controlled by coefficient control network (80 in Fig. 1), wherein initial taps of FIR filter. If the coefficients have not converged, then the equalization is reinitiated (as shown in Fig. 2).

By providing a tap coefficient controller to an equalizer processor would optimize and proper operation of tap arrangement. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the coefficient control network processor taught by Bhatt et al. with the waveform equalizer taught by AAPA. By doing so, the waveform equalizer has better performance while transfer path varies and improve multipath fading problems.

- b) Claims 2, 3, and 8-22 are rejected under similar reasons as rejected claim 1.
- c) Regarding claim 4, Bhatt et al. disclose a waveform equalizer as claimed in any one of the preceding claims 1, 2, and 3, wherein said tap coefficient monitoring unit monitors only a specific tap, and when a sharp change in a tap coefficient of said specific tap is detected, said tap coefficient monitoring unit instructs that the tap

arrangement of said equalizing filter unit is changed so as to restart the equalization of the reception signal (as shown in Fig. 2; Col 3, L58-Col 4, L23).

d) Claim 5 is rejected under similar reasons as rejected claim 4.

Allowable Subject Matter

8. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Y Zheng whose telephone number is 571 272-3049. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 09/730,188

Page 6

Art Unit: 2634

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 8, 2005

Eva Yi Zheng
Examiner
Art Unit 2634

A handwritten signature in black ink, appearing to read "Shuwang Liu".

SHUWANG LIU
PRIMARY EXAMINER